

CLAIMS

1. A breathable insole heater element formed from  
5 porous flexible metallised fabric, for use in an insole  
for footwear.
2. An insole heater element according to claim 1 formed  
by photochemical etching of the metallised fabric.
- 10 3. An insole heater element according to claim 1 or  
claim 2 wherein the pattern of the heater element is  
selected so that a first part of the heater element  
provides a different heat output in use to that of a  
15 second part of the heater element.
4. An insole heater element according to any one of  
claims 1 to 3 having a thermal protection device to  
provide temperature control of the heater element.
- 20 5. An insole heater element according to claim 4  
wherein the thermal protection device is a surface  
mounted thermistor.
- 25 6. An insole heater element according to any one of  
claims 1 to 5 wherein the metallised fabric is coated  
with a continuous layer of metal.

7. An insole heater element according to any one of  
claims 1 to 6 wherein the fabric comprises yarns and/or  
fibres, the individual yarns or fibres being encapsulated  
5 in metal prior to manufacture of the fabric.

8. An insole heater element according to any one of  
claims 1 to 7 wherein the fabric is any one of woven,  
non-woven, knitted, a laminated composite, pressed felt,  
10 braid.

9. An insole heater element according to any one of  
claims 1 to 8 wherein the fabric is woven from polyester  
threads and the metal is nickel.

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10. An insole heater element according to any one of  
claims 1 to 9 having termination pads for connection of  
the heater element to a battery/control system.

20 11. An insole heater element according to any one of  
claims 1 to 9 having a flexible fabric connection member  
for protruding from the final insole so as to provide  
connection of the heater element to a battery/control  
system.

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12. An insole for footwear including an insole heater  
element according to any one of claims 1 to 11.

13. An insole according to claim 12 wherein the insole heater element is laminated between a layer of insole face fabric and a backing layer.

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14. An insole according to claim 13 wherein the face fabric is attached to the heater element by a thermoplastic web.

10 15. An insole according to claim 12 wherein the insole heater element is formed integrally with a component of the insole.

16. An insole according to any one of claims 12 to 15  
15 having a thickness in the range 0.1 mm to 1.0 mm.

17. An insole according to any one of claims 12 to 16 wherein the heater element extends substantially the full length of the insole.

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18. An insole according to any one of claims 12 to 17 wherein the heater element is configured so that the insole can be cut or trimmed to one of several possible shapes or sizes to fit an article of footwear without  
25 adversely affecting the operation of the heater element.

19. An insole according to any one of claims 12 to 18 having heat-activatable agents for release due to heat generated by the heater element.

5 20. An insole according to claim 19 wherein the agents are selected from antimicrobials, insect repellents, fragrances, perfumes.

21. An insole according to claim 19 or claim 20 wherein  
10 the agents are microencapsulated in microcapsules.

22. An insole according to claim 21 wherein the microcapsules melt at an initiation temperature.

15 23. An insole according to claim 21 wherein the microcapsules allow diffusion of the agent through their walls to effect a slow release mechanism within the insole at an initiation temperature.